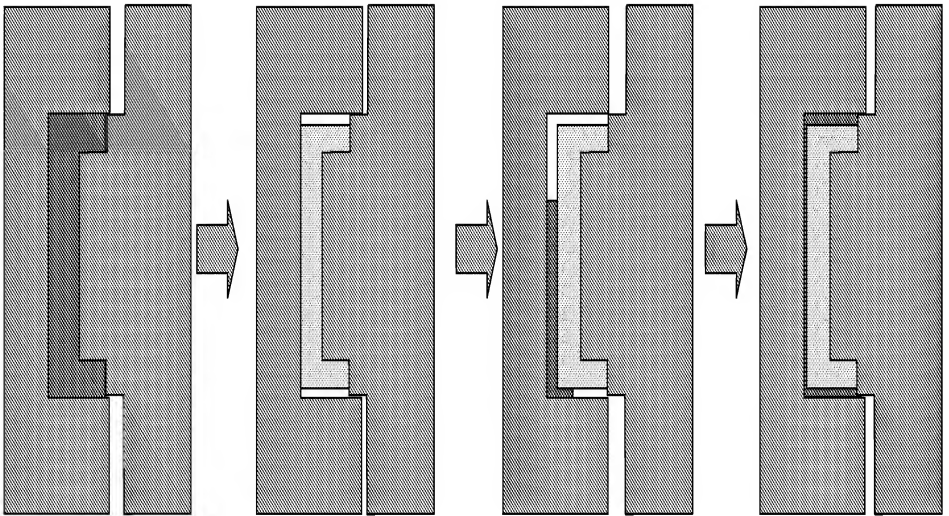


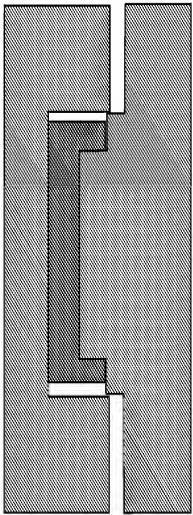
Prior art (Injection amount) Explanation from Left to Right

1. Inject molten resin to mold to form an article while mold is closed.
2. Due to pressure drop caused by shrinkage after cooling within mold, a gap is formed between the mold and article shown in light blue.
3. No movement by flow is expected even coating material is injected into gap in amount to form the coating layer in desired thickness. No clamping force other than that from mold itself can be expected. (No pressure is applied to injected coating material due to structural limitation)

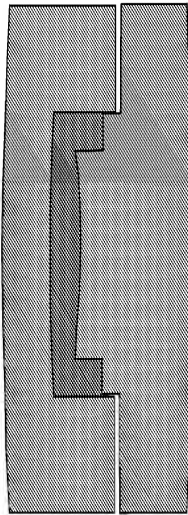


Present invention

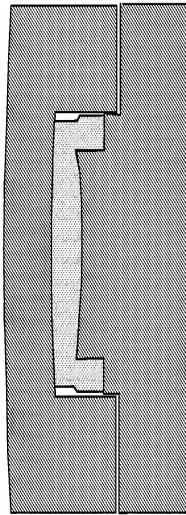
1. Inject molten resin into mold while mold is open. (An amount of molten resin excessive to the cavity volume is charged into mold.)
2. As shrinkage of injected resin progresses due to cooling, movable mold moves to closing direction, however, this movement is stopped when no more shrinkage occurs. Then, a gap is formed at standing sides of mold, as is shown in the second Fig. from the left.
3. Coating material is injected to the gap in an amount to form the desired thickness of coating layer.
4. Injected coating material is moved to cover all surfaces to be coated of article by closing movable mold, with giving clamping pressure to both article and coated layer.



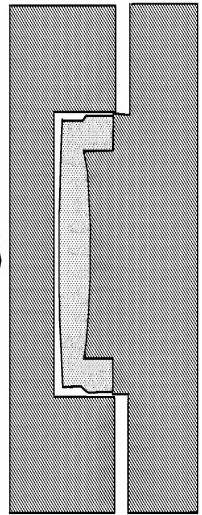
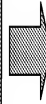
1. Opening/injecting resin



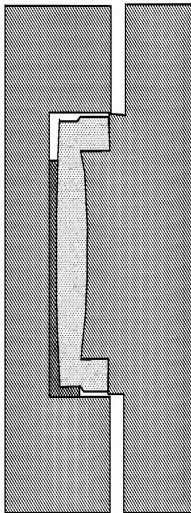
2. Closing mold with high pressure



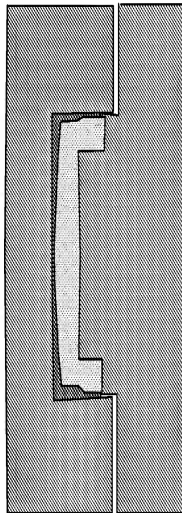
3. cooling-shrinkage



4. Mold is recovered form deformation when reopened



5. Inject coating material



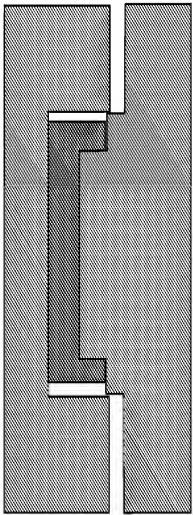
6. Reclosing (lower pressure/tiny deformation of mold) /coating material becomes flowable →cured

Prior art (controlling with closing pressure)

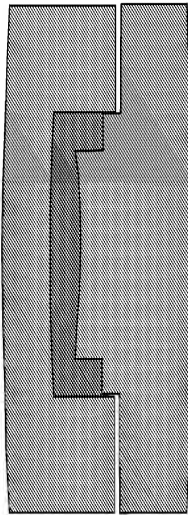
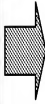
Due to the deformation appeared in Steps 2 and 3, finished product has big deviation in thickness from part to part.

The degree in deformation of mold between at Steps 2 and 3, and Step 6 becomes large de to the big difference in clamping pressure between those steps.

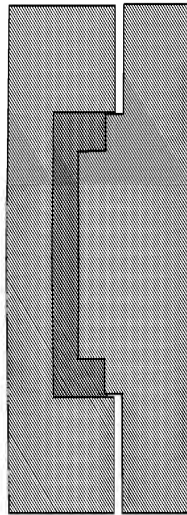
This results in the big deviation in coating thickness.



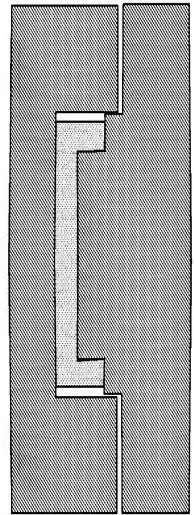
1. Opening/injecting resin



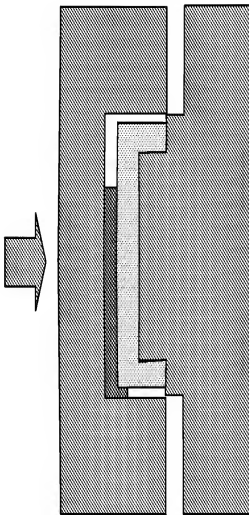
2. Closing mold with high pressure



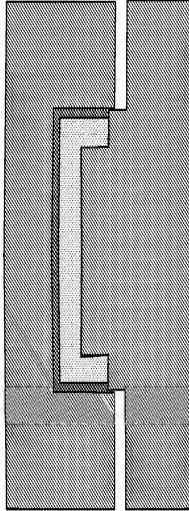
3. Less closing pressure/less mold deformation



4. Cooling/shrinkage of resin



5. Opening/recover from deformation/ Inject coating material



6. Reclosing (lower pressure/tiny deformation of mold) /coating material becomes flowable =>cured

Present invention

Article having less deviation at Steps 2 and 3 is obtainable.

Practically same clamping pressure is applied at both Steps 3 and 4. This results in almost the same deformation at those steps.

⇒ This bears less deviation in coating layer thickness. Furthermore, it bears improvement in coating quality at side surfaces of the molded article.